

Preface

The International Conference on Advanced Material Research and Application was held August 13 to August 14 in Guilin, China. The goal of this conference was to regroup experts in the field of materials science including, alloy materials, polymers, composite materials, nanomaterials, applied materials... for them to share their last results in the field. The participants whose abstracts have been accepted had the opportunity to submit a proceeding that would be published in a volume published by Trans Tech Publication. The peer-review process consisted of a reviewing performed by 2-4 expert referees in the field. The selected criteria for publication were based on novelty, originality and clarity of the manuscripts.

This volume contains peer-reviewed papers presented at AMRA2016 and is divided in 12 sessions that reflect the different fields of research that have been addressed during this conference.

On behalf of the organizing committee, we wish to thank the keynotes speakers for their contributions to the success of AMRA2016: Prof.Dr.Ying Yu from Central China Normal University, Prof. Qingsong Mei from Wuhan University, Prof.Dr. Lu Anxian from Central South University and Prof. Chi-Fai Cheung, Benny from The Hong Kong Polytechnic University.

We are pleased to acknowledge Vico Information and Industry Research Center (VIIRC) for its financial support and Trans Tech Publication for having accepted to publish the proceedings submitted by the conference participants.

We deeply appreciate the contribution, the competence and the dedication of the all the people who have supported the conference and the reviewers for the time they have dedicated to the peer-review process.

AMRA2016 Organizing Committee

Committees

General Chair

Prof. Qingsong Mei, Wuhan University, China

Program Chair

Prof. Dr. Anxian Lu, Central South University, China

Co-Chair

Prof. Chi-Fai Cheung, Benny, The Hong Kong Polytechnic University, Hong Kong, China

Prof. Dr. Hongtao Zhang, Hubei University of Technology, China

Prof. Dr. Ying Yu, Central China Normal University, China

Editor

Prof. Qingsong Mei, Wuhan University, China

Technical Program Committee

Prof. Qingsong Mei, Wuhan University, China

Prof. Dr. Anxian Lu, Central South University, China

Prof. Chi-Fai Cheung, Benny, Hong Polytechnic University, China

Prof. Dr. Hongtao Zhang, Hubei University of Technology, China

Prof. Dr. Ying Yu, Central China Normal University, China

Prof. Guozhong Zhao, Capital Normal University, China

Dr. Guodong Yan, Shanghai University of Engineering Science, China

Dr. Liya Xu, Liming Vocational University, China

Dr. He Huang, China Academy of Engineering Physics, China

Prof. Yongcheng Lin, Central South University, China

Dr. Salma Sherbaz, National University of Science and Technology, Pakistan

Dr. Said Benramache, University of biskra, Algeria

Dr. Jingwei Zhao, University of Wollongong, Australia

Prof. Sangbing Tsai, Zhongshan Institute, China

Dr. Guodong Wu, Fujian Institute of Research on the Structure of Matter, China

Dr. Navid Freidoonimehr, Ferdowsi University of Mashhad, Iran

Dr. Weiping Liu, Nanchang University, China

Prof. Xiaoping Wang, Shaanxi University of Chinese Medicine, China

Dr. Muhammad Rashid, Comsats Institute of Information Technology, Pakistan

Prof. M. Sridharan, SEEE SASTRA UNIVERSITY, India

Prof. Jiangyong Wang, Shantou University, China

Dr. Taha Abdel Mohaymen Taha Hemaïda, Menoufia University, Egypt

Prof. Zhiqiang Fu, China University of Geosciences, China

Dr. Chengyou Wu, Qinghai University, China
 Prof. Jianong Li, Guilin University of Technology, China
 Prof. Weichun Pan, Zhejiang Gongshang University, China
 Dr. Jun Guo, Xi'an University of Science and Technology, China
 Prof. Xingdong Shen, Tianjin Vocational Institute, China
 Dr. Yi Guo, Beijing Vocational College of Agriculture, China
 Dr. Xiaobo Zhang, North College Of Beijing University of Chemical Technology, China
 Prof. Linxiang Wang, Zhejiang University, China
 Dr. Dagang Wang, China University of Mining and Technology, China
 Dr. Guilong Xu, South China University of Technology, China
 Dr. Yiping Wang, Wuhan University of Technology, China
 Dr. Zhiqiu Gao, Northeastern University at Qinhuangdao, China
 Prof. Fangming Xiao, Guangdong Academy of Sciences, China
 Dr. Haibing Xu, China Academy of Engineering Physics, China
 Prof. Yu Li, Wuhan University Of Technology, China
 Dr. Wei Li, Nanjing University of Posts and Telecommunications, China
 Dr. Quanbao Ma, University of Oslo, Norway
 Prof. Xiaoxia Li, Electronic Engineering Institute, China
 Dr. Yue Li, Tsinghua University, China
 Dr. Tianhua Xu, University College London, Britain
 Dr. Hu Huang, Keio University, China
 Prof. Zhenyang Zhong, Fudan University, China
 Dr. imran memon, Zhejiang University, Pakistan
 Prof. Faheem Uddin, BUITEMS, Pakistan
 Prof. Xuepeng Lyu, Nanjing Institute of Technology, China
 Dr. Mojtaba Dehghan Manshadi, Sharif University of Technology, Iran
 Prof. ANTONIO CARLOS GUASTALDI, Universidade Estadual Paulista “Julio de Mesquita Filho - UNESP, Brazil
 Prof. Yuli Lin, Chung Hua University, Taiwan
 Dr. Francesca Rossi, IMEM-CNR Institute, Italy
 Prof. Erwan Rauwel, Tallinn University of Technology, Republic of Estonia
 Prof. Abdel Ghani AISSAOUI, Tahri Mohamed of Bechar, Algeria
 Dr. Dibyaranjan Rout, KIIT University, Bhubaneswar, India
 Prof. Navdeep Malhotra, YMCA University of Science & Technology, Faridabad, Haryana, India
 Prof. P. Mullai, Annamalai University, India
 Dr. Pascale Jolinat, Université Paul Sabatier, France
 Dr. Jeane Estela Ayres de Lima, Pontifical Catholic University of Rio Grande do Sul, Brazil
 Dr. Roohollah Ahmady Jazany, AZAD University, Iran
 Dr. Hamed Sarkardeh, Hakim Sabzevari University, Iran
 Dr. P. Gangopadhyay, Materials Science Group, IGCAR, India
 Dr. Anna Szymczyk, West Pomeranian University of Technology in Szczecin, The Republic of Poland
 Dr. Valter Bruno Silva, Porto University, INEGI, Portugal
 Dr. Giampiero Contestabile, Scuola Supeiore Sant’Anna, Italy
 Dr. Ledisi G. Kabari, Chief Lecturer, Ken Saro Wiwa Polytechnic, Bori
 Dr. Varkey Sebastian, Nirmalagiri College, Kannur University, India

Prof. Cheng-Hsing Hsu, National United University, Taiwan
Prof. Jinlian Hu, The Hong Kong Polytechnic University, Hong Kong, China
Prof. Alper Ilki, Istanbul Technical University, Turkey
Dr. Xue'ai Li, Yanshan University, China
Prof. Yun Ye, Fuzhou University, China
Prof. Qingquan Liang, Victoria University, Australia
Dr. Ali Bahrami, Sahand University of Technology, Iran
Dr. Qi Wang, Shandong University, China
Dr. Yonggang Tong, National Engineering Research Center of Mechanical Product Remanufacturing, Academy of Armored Forces Engineering, China
Dr. Keyan Bao, Nanyang Normal University, China
Prof. Chunyan Ban, Northeastern University, China
Dr. Sona Rani, UIET, Kurukshetra University, Kurukshetra, Haryana, India

Sponsor

Vico Information and Industry Research Center (VIIRC) is the sponsor of 2016 International Conference on Advanced Material Research and Application. It is a registered, non-profit research and development organization, conducting collaborative interdisciplinary research of the most up-dated methodologies and technologies within its areas of expertise.